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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,590	04/03/2002	Zhi Xian Chen	2577-124A	1775
6449	7590	05/19/2006	EXAMINER	
ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			KUBELIK, ANNE R	
			ART UNIT	PAPER NUMBER
			1638	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/009,590	<b>Applicant(s)</b> CHEN ET AL.	
	<b>Examiner</b> Anne R. Kubelik	<b>Art Unit</b> 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 17-19 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-14 and 16-19 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The objection to claim 19 because of an informality is withdrawn in light of Applicant's amendment of the claim.
4. The rejection of claims 1-14 and 16-19 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention is withdrawn in light of Applicant's amendment of the claims.
5. The rejection of claims 1-8, 10-14 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strickland (WO 97/12512) in view of Finer (1988, Plant Cell Rep. 7:399-402) is withdrawn in light of Applicant's amendment of the claims.

### ***Claim Objections***

6. Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 17, in which the hormone concentration can be zero, is broader than parent claim 1, in which hormone is present.

***Claim Rejections - 35 USC § 102***

7. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Strickland (WO 97/12512). The rejection is repeated for the reasons of record as set forth in the Office action mailed 4 November 2005, as applied to claims 1-6 and 16-17. Applicant's arguments filed 3 March 2005 have been fully considered but they are not persuasive.

Strickland teaches a method of producing a transgenic cotton plant comprising exposing petiole explants to *Agrobacterium* comprising a DNA encoding a selectable marker, culturing the explants to induce callus formation, selecting transformed callus, culturing the selected callus in suspension culture to induce embryoid formation in less than "about" 14 days and regenerating the embryoid into a plant, wherein the culture media does not contain hormones (claims 1-2, 4-6, 10, 12-13 and 15-16). The culture media had 30 g/l glucose as the sole carbon source (pg 20, lines 20-21 and Table 1).

Applicant urges that the rejection is overcome by the amendment to claim 1 (response pg 8). This is not found persuasive, as the hormone concentration can be zero in claim 17.

***Claim Rejections - 35 USC § 103***

8. Claims 1-14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al (US 2004/0087030, filed December 1998) in view of Strickland (WO 97/12512).

The claims are drawn to a method of producing a transgenic cotton plant by exposing petiole explants to *Agrobacterium* harboring an exogenous gene and a selectable marker, culturing the petiole explants in media containing a plant hormone, selecting transformed callus

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that expresses the exogenous gene, culturing the selected callus in suspension culture to induce embryoid formation and regenerating the embryoids into plants.

Armstrong et al teach *Agrobacterium* mediated transformation of cotton explants in hormone-free media, selection of transformed callus on media containing 30 g/l glucose, 0.1 mg/l 2,4-D and 0.5 mg/ml kinetin, regeneration of the callus into plants in hormone-free media, culturing the selected callus in suspension culture to induce embryoid formation in hormone-free media, and regenerating the embryoids into plants (§§23, 122-124 and 141). Armstrong et al also teach use of 0.1 g/l casein hydrolysate and 1.9 g/l KNO<sub>3</sub> in the embryoid regeneration media (§§131 and 137-141); casein hydrolysate is a nitrogen source containing both asparagine and glutamine. Armstrong et al do not disclose culturing the selected callus in hormone-free suspension culture.

The teachings of Strickland are indicated above.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of method of producing a transgenic cotton plant as taught by Armstrong et al, to culturing the callus in hormone-free suspension culture as described in Strickland. One of ordinary skill in the art would have been motivated to do so because of the teachings of Strickland that hormone-free suspension culture could produce embryoids in even the most recalcitrant variety (pg 22, lines 10-22) and because selection of suspension culture over a culture with a solid support is an obvious design choice. The concentration of nitrogen and hormone Armstrong et al teach are “about” 200 mg/l to “about” 1 g/l asparagine and “about” 500 mg/l to “about 2 g/l glutamine, “about” 3.8 g/l KNO<sub>3</sub>, “about 0.05 mg/l 2,4-D and “about 0.1 mg/l kinetin.

***Conclusion***

9. No claim allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Anne Kubelik, Ph.D.  
May 11, 2006



ANNE KUBELIK, Ph.D.  
PRIMARY EXAMINER